



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/258,961 03/01/99 JIANG

T 98-0645.1

MMC1/0426

STEPHEN A GRATTON
2764 SOUTH BRAUN WAY
LAKEWOOD CO 80228

EXAMINER

PAREKH, N

ART UNIT

PAPER NUMBER

2811

DATE MAILED:

04/26/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/258,961

Applicant(s)
Jiang et al

Examiner
Nitin Parekh

Group Art Unit
2811



☒ Responsive to communication(s) filed on Mar 1, 1900

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 24-36 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 24-36 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2811

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 24-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (Fig. 7) in view of Lee et al (US Pat. 5796586).

Regarding claim 24, the admitted prior art (Fig. 1A and B; pages 2-4) et al discloses substrate for fabricating a semiconductor package comprising :

- a plurality of conductors formed on a first surface of the substrate, the conductors comprising a plurality of ball bonding pads
- a first mask formed on the first surface of the substrate comprising a plurality of via openings to the ball bonding pads, and
- a second mask substantially covering a second surface of the substrate and including an opening defining an opening for wire bonding area.

The admitted prior art fails to specify the opening in the second mask to define the die attached area. Lee et al teaches defining an opening through the mask on the substrate and bonding the die to the die attach area corresponding to the outline of the die to improve the adhesion of die and to

Art Unit: 2811

prevent subsequent lift-off problems during rework/repair applications near the die attach area (Fig. 7 and Fig. 1-6; Col. 1-8). The cited reference by Akram et al (US Pat. 5739585) teaches the fabrication of a ball grid array (BGA) package using a variety of substrates and specifies an opening in the second mask defining the die attach area on the substrate (Fig. 4D, 4E and Fig. 1-10; Col. 7). Therefore, it would have been obvious to the person of ordinary skill in the art at the time invention was made to use a second mask substantially covering a second surface of the substrate and including an opening defining an opening defining a die attach area and adhesively bonding the die to the area corresponding to the outline of the die to prevent the lift-off related problems during rework/repair applications using Lee et al's teachings in the admitted prior art as cited in claims 24-26.

Claims 27-29 are rejected over the admitted prior art (Fig. 1A and B; pages 2-4) in view of Lee et al (Fig. 1-7; Col. 1-8). and as explained above for claim 24-26.

Claims 30-33 are rejected over the admitted prior art (Fig. 1A and B; pages 2-4) in view of Lee et al (Fig. 1-7; Col. 1-8) and as explained above for claims 24-26.

Claims 34-36 rejected over the admitted prior art (Fig. 1A and B; pages 2-4) in view of Lee et al (Fig. 1-7; Col. 1-8) and as explained above for claims 28, 30, 31 and 33.

Art Unit: 2811

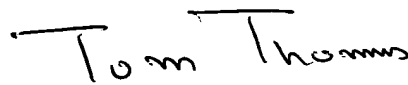
Papers related to this application may be submitted directly to Art Unit 2811 by facsimile transmission. Papers should be faxed to Art Unit via Technology Center 2800 fax center located in Crystal Plaza 4, room 4C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin Parekh whose telephone number in (703) 305-3410. The examiner can be normally reached on Monday-Friday from 08:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas, can be reached on (703) 308-2772. The fax number for the organization where this application or proceeding is assigned is (703) 308-7722 or 7724.

Nitin Parekh

04-21-2000


Tom Thomas
Supervisory Patent Examiner
Technology Center 2800